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ABSTRACT

Applied Business Technologies, Inc. is in the process of developing multi-media training CD's to support the implementation of its PowerCAMPUS student information system product. Multi-media training is a very powerful tool for achieving objectives. Trainees take the course at a time convenient for them and progress at a pace suited to their ability. Post course testing reveals this type of training is significantly more effective than traditional classroom training. Especially effective is the eye-to-eye contact with the instructor during the video portion of the training. A comparison of the life-cycle costs to deliver system training using a multi-media enhanced program versus a traditional one shows the significant economic advantage of the technique. The advantage escalates dramatically with scale. Traditional training techniques in the software industry, the multi-media training paradigm, and program limitations are discussed. (Author/AEF)

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Effectiveness of Multi-media Training Programs

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Introduction

ABT is in the process of developing multi-media training CD's to support the implementation of its PowerCAMPUS student information system product. Multi-media training is a very powerful tool for achieving training objectives. Trainees take the course at a time convenient for them and progress at a pace suited to their ability. Post course testing reveals this type of training is significantly more effective than traditional classroom training. Especially effective is the eye-to-eye contact with the instructor during the video portion of the training. A comparison of the life-cycle costs to deliver system training using a multi-media enhanced program vs. a traditional one shows the significant economic advantage of the technique. The advantage escalates dramatically with scale.

Traditional Training Techniques in the Software Industry

The dominant approach used in the software industry today to deliver training is on-site instructor based training. This method requires an expert to deliver a standard curriculum of training on each module in the system. The average number of modules a senior trainer can master is four to six. Many enterprise systems contain twenty to thirty modules.

Training in each module is normally broken up into three sessions. Each session normally lasts three days. In the first session, the objective is to teach the students how to set-up the system to meet their needs. For this session, the students consist of managers and/or power users as well as administrative computing system administrators. The second session is designed to train the end-users, after the data conversion has taken place. This second session also serves to review problems encountered during set-up, provide remedial training to decision makers and advise on set-up options. The third session occurs during the go-live period, and consists primarily of on-site operational assistance.

This type of training is used in three situations, initial system training conducted during system implementation, training new employees when there is turnover in the organization and to re-train personnel who were not able to grasp the fundamentals during the initial training. Re-training generally occurs three to six months after the initial training and generally consists of one two or three-day session.

Traditional instructor based training has the following characteristics:

No session can be conducted without the instructor present,

For maximum effectiveness, the instructor must review the course script and course objectives prior to each session; this is especially true as the number of modules an instructor is expected to master climbs,

As demand on the provider organization for training in a module climbs, there is a diseconomy of scale; that is, as the vendor becomes more successful at selling its enterprise system, it must hire more instructors to conduct the training. The timing of the hiring generally lags the demand, which means there is stress placed on incumbent instructors until the new hires are up to speed. New instructors do not have the experience base of the existing instructors.

The client organization incurs 100% variable cost for the training; all re-training and training of new employees is equal to the unit cost of the original training.

The effectiveness of traditional instructor based training is a function of:

the quality and health of the instructor,
the quality of the training program, and
the attendance, skill level and health of the students.

One of the most challenging obstacles facing an instructor is the varying skill level of the students. The pace of the instruction is a function, in general, of the "average" skill level of the students. However, no one is "average". Furthermore, all training must be completed in the time allowed. Invariably, some students "don't get it". The slow pace frustrates others.

Of course, absenteeism for a scheduled training session is devastating. All costs to deliver the training are incurred. Yet, the absentee student will require remedial training and will be unable to continue with the rest of the curriculum effectively until the remedial training is delivered.

The unit costs of delivering traditional instructor based training average:

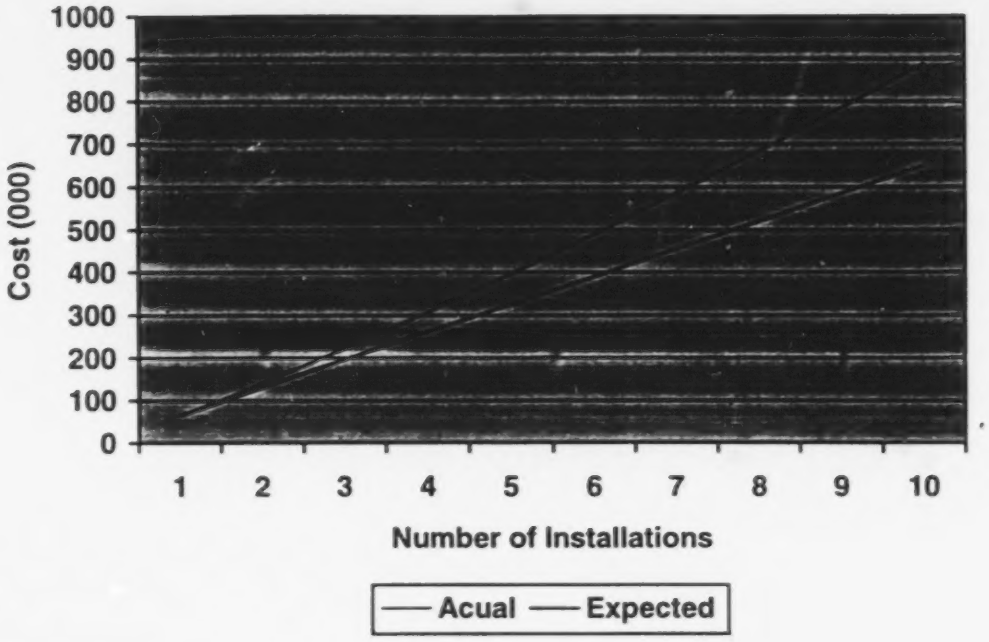
$1000 per day for the instructor's time; this includes the overhead for supporting the instructor, return to investors in the vendor enterprise, as well as the direct costs of the instructor's salary and benefits,

$330 per day travel expense,

$100 per day materials expense.

An average administrative system requires 65 days of implementation training and 10 days per year of maintenance training. The average life cycle of an administrative system is seven years. An average small college or university has five users per department in six different departments – admissions, records, billing, financial aid, alumni/development and the business office. Total training costs during this period, with an average class size of five pupils, are $180,000. Exhibit 1 presents the costs of delivering traditional instructor based training as a function of the number of installations.

Exhibit 1
Cost of Traditional Training



Multi-media Training

Multi-media training is a new paradigm in delivering training programs. It incorporates all the benefits of CPT (computerized program training) with the full action video and audio capabilities of modern computers. CPT is a form of training that allows the user to learn when they want to, and at what pace they want to. The program itself, furthermore, is not dependent on the quality of the instructor or the health of the instructor. The programs can be designed and delivered by the top instructors in the organization.

Multi-media programs are laid out very similarly to traditional programs. The training objectives for each segment of the program are the same as traditional programs. However, unlike traditional training, the student controls the pace of covering the material.

With multi-media, the student is one-on-one with the instructor. There is direct eye-to-eye contact with the instructor. This characteristic has been proven to be more effective than traditional classroom training. The attention of the student to the training material is stronger, for a longer period.

If the student does not understand a section of the material, the student may return to review the lesson. Hence, the student is in control at all times. Returning for review when the student desires is more effective than "later", since the feedback and reinforcement are immediate.

After each lesson, the student can be tested on the material, as with traditional training. With multi-

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media, however, the student can be put back into the lesson at the point where the material is covered. This is tantamount to tutoring. Multi-media courses can track grades and report student performance to the course administrator. To gain certification, a minimum grade must be achieved.

Limitations

Multi-media training does not completely replace traditional training. Programs cannot anticipate all questions or needs. Multi-media is most effective at addressing "basic" skills, such as navigation through a software product, basic functionality and set-up. Instructors are still required to help decision makers analyze the best set-up for their environment and to guide students who are unable to orient themselves to the training they need.

Multi-media training is enormously scalable. Once developed, a multi-media course can be duplicated for a few dollars. The amortized cost of a multi-media workstation is a few dollars a day. Support is minimal.

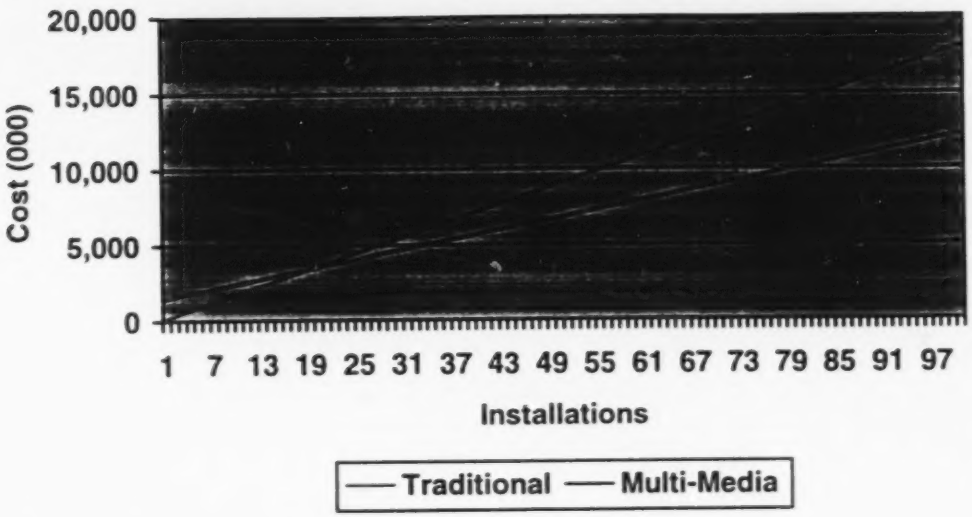
Most students like multi-media courses better, and most score higher on tests after shorter exposure to the material. The same quality course can be delivered consistently. Modifications to course material are easy with modern development tools. Video productions, however, are expensive and skill is required to produce a multi-media program to know what should be and what should not be shot.

Much of the cost of delivering multi-media training is fixed. The cost to produce an hour of multi-media training is about $20,000. This includes all programming, course design and audio/video production. Experience indicates that the ratio of contact time between traditional and multi-media training methods is about three to one. That is, three hours of traditional training can be condensed to one hour of multi-media training.

Approximately forty percent of the material in a traditional software training program can be adapted to a multi-media program. That is 26 days in an implementation project, or 69 hours of multi-media programming. The cost for a software company to produce a full set of multi-media programs would be $1,380,000. Exhibit 2 shows the break-even point for a company to develop a multi-media program.

Exhibit 2

Comparison of Traditional to Multi-media Training Costs



As can be seen, the argument for multi-media is quite strong.

Demo

The presentation of this paper includes a live five minute demo of ABT's multi-media training CD for its PowerCAMPUS application.

Summary

ABT has adopted a multi-media approach to its delivery of training services. We believe multi-media will allow us to scale up much faster with little or no loss of training effectiveness. We believe our customers will benefit from the reduced cost of training both initially and on-going as required for existing and new staff. ABT offers its training CD's at no additional cost to the basic cost of its software.